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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,005	08/31/2001	Walter Joseph Carpini	78945-11/Jlo	9279
29382	7590	05/03/2006	EXAMINER	
TROPIC NETWORKS INC. DR. VICTORIA DONNELLY 135 MICHAEL COWPLAND DRIVE KANATA, ON K2M 2E9 CANADA			AHMED, SALMAN	
			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/943,005	CARPINI ET AL.	
	Examiner	Art Unit	
	Salman Ahmed	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/3/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 120-138 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 120-131 and 133-138 is/are rejected.
- 7) ☒ Claim(s) 132 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/31/01, 6/10/02, 4/3/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 120-138 are pending

Claims 1-119 have been cancelled by the applicant.

Claims 120-131 and 133-138 are rejected.

Claim 132 is objected.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 120-131 and 133-138 are rejected under 35 U.S.C. 102(e) as being anticipated by Jain (US PAT PUB 2002/0133756).

In regards to claim 120, Jain anticipates a method of path restoration in a communication network (figure 1 or 7 element 100) having a first switching router (figure 1 or 7, page 8 section 0083, node 128) and a second; switching router (figure 1 or 7, page 8 section 0083, node 106), first (figure 1 or 7, page 8 section 0083, 702) and second (figure 1 or 7, page 8 section 0083, 706) communication paths (figure 1 or 7, page 7 section 0079, (LSPs) 702-708) extending between first (figure 1 or 7, page 8 section 0083, node 128) and second switching routers (figure 1 or 7, page 8 section

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0083, node 106), second communication path including at least one communication path element different from first communication path (figure 1 or 7, page 7 section 0079, (LSPs) 702 and 706), the method comprising steps of; creating a first label switched path on first communication path (figure 1 or 7, page 8 section 0083, 702); placing one or more data flows within first label switched path (page 8 section 0083, a label switched path (LSP) may be set up that has its origin at the base node (e.g., node 128) and terminates at the end node (e.g., node 106)); creating a second label switched path on second communication path (figure 1 or 7, page 8 section 0083, 706); associating second label switched path with said first label switched path so as to identify second label switched path as an alternative path for first label switched path (page 8 section 0083, LSP 702 provides an alternate path from the node 128 to the node 106 that does not include the node through which the adjacency was learned (i.e. the node 124). Rather, the path 702 passes through the node 126); transferring knowledge of one or more data flows within first label switched path to second label switched path (page 10 section 0105 and 0106, in the event that traffic needs to be re-routed via a backup, protection path to avoid a fault, the backup path may need to have a bandwidth that is equal to (or greater than) the protected path. In which case, the quality of the backup path would be specified as commensurate with the original, protected path. In the state 912, the protection criteria specified in the states 904-910 may be transmitted throughout the network 100 (FIG. 1) along with the identification of the network resource to which it pertains. For example, a network element (e.g., a node) may communicate the protection criteria made available to it to the other

elements in the network 100. This may be accomplished, for example, by the network element sending link state attribute (LSA) advertisements. Each node may then store the advertised fault protection criteria in its local memory); and redirecting data flows destined for first switched path to second label switched path (page 7 section 0078, the protection LSPs allow data to be re-routed so as to avoid failed network nodes as well as failed network links).

In regards to claim 133, Jain anticipates a router (figure 1 or 7, page 8 section 0083, node 128) for routing data onto a network having a network node (figure 1 or 7, page 8 section 0083, node 106) and first (figure 1 or 7, page 8 section 0083, 702) and second (figure 1 or 7, page 8 section 0083, 706) communication paths extending from router (figure 1 or 7, page 8 section 0083, node 128) to network node (figure 1 or 7, page 8 section 0083, node 106) router comprising: first routing means for routing a first label switched path (figure 1 or 7, page 8 section 0083, 702) onto first communication path (page 8 section 0083, a label switched path (LSP) may be set up that has its origin at the base node (e.g., node 128) and terminates at the end node (e.g., node 106)); second routing means for routing a second label switched path (figure 1 or 7, page 8 section 0083, 706) onto second communication path (page 8 section 0083, LSP 702 provides an alternate path from the node 128 to the node 106 that does not include the node through which the adjacency was learned (i.e. the node 124). Rather, the path 702 passes through the node 126); set up means for setting up first and second label switched path (page 8 section 0083, a label switched path (LSP) may be set up that has its origin at the base node (e.g., node 128) and terminates at the end node (e.g., node

106); associating means for associating second label switched path with first label switched path so as to identify second label switched path as an alternative path for first label switched path (page 8 section 0083, LSP 702 provides an alternate path from the node 128 to the node 106 that does not include the node through which the adjacency was learned (i.e. the node 124). Rather, the path 702 passes through the node 126); and redirecting means for redirecting flows destined for said first switched path to second label switched path (page 7 section 0078, the protection LSPs allow data to be re-routed so as to avoid failed network nodes as well as failed network links).

In regards to claims 121, 123, 124, 134-136 Jain anticipates a step of creating a second label switched path comprises step of associating second label switch path and further comprising a step of sending a set up signal to second switching router, set up signal having a extra data field identifying the first label switched Path; step of sending a set up signal creating a second label switched path comprises an RSVP signaling method and the data field identifying the first label switched path is sent as all opaque object; step of sending a set up signal creating a second label switched path comprises a CR-LDP signaling method and the data field identifying the first label switched path is sent as an opaque TLV (page 8 and 9, section 0092, To provide support, such as in a Multi-Protocol Label Switching (MPLS) network, for the signaling required to set up and to utilize the protected LSPs and the alternate, protection LSPs, a new type-length value (TLV) may be defined. FIG. 8 illustrates a TLV 800 in accordance with the present invention. A value field of the TLV 800 may include a Shared Risk Link Group (SRLG) 500 (FIG. 5) that corresponds to a possible fault to be avoided by the protection LSP. In

addition, the value field of the TLV 800 may include the next hop label 802 for the protection LSP that is to be utilized in the event that the fault identified by the SRLG occurs. For example, for RSVP, this TLV 800 may be included in PATH messages sent as a request. In RESV (reservation) messages used to form an LSP for communicating data, nodes that support this feature will recognize the TLV 800 (e.g., by recognizing the contents of its type field 804) and add the previous hop label and link SRLG to its forwarding table 312 (FIG. 3). Thus, the fast reroute technique of the invention can be implemented between any two nodes having this support. If this feature is not supported by a network element, the TLV 800 may be passed unchanged in PATH and RESV messages).

In regards to claim 122 Jain anticipates step of redirecting data flow comprises a single step of switching from first label switched path to second label switched path (page 9, section 0095, the fault manager 336 (FIG. 3) of each node may then look up the SRLG its forwarding table 312 (FIG. 3) to determine whether any LSPs associated with the node are affected by the fault. If so, then the next hop label 802 (FIG. 8) identified based on the SRLG may be substituted and used as the appropriate label for the next hop for the appropriate protection LSP that corresponds to the SRLG. Accordingly, the protected LSP is reformed using the protection LSP to avoid the fault).

In regards to claim 125 Jain anticipates the step of creating a second label switched path occurs before the step of placing one or more data flows within first label switched path (page 8 section 0083, LSP 702 provides an alternate path from the node

128 to the node 106 that does not include the node through which the adjacency was learned (i.e. the node 124).

In regards to claim 126-128, 137 and 138 Jain anticipates the step of creating a second label switched path occurs after change of state; the step of monitoring a state of data transmission associated with first and second communications paths and wherein step of redirecting flows is responsive to a change of state of at least one of first and second communications paths; the step of redirecting flows is responsive to at least one of a fault or failure in the transmission capability of first communication path and the density of data transmitted on first communication path (pages 6 and 9 sections 0067, 0093 and 0094, When a fault does occur, program flow moves to a state 416. The fault will generally be detected by one of the nodes of the network 100 (FIG. 1). For example, the internal circuitry of a router (e.g., nodes 124, 126 or 128 of FIG. 1) may detect a failure associated with a particular one of its slots. Alternately, a router may detect a failure of an associated link such as by an absence or discontinuance of data received from the link or by a link layer mechanism. Other fault detection techniques may be implemented. From the state 622, program flow moves to a state 624 where a determination is made as to whether a fault has occurred somewhere in the network 100. When a fault occurs, program flow may move to a state 626).

In regards to claim 129 Jain anticipates the step of transferring knowledge further comprises transferring a soft state of each: one or more data flows (page 7, section 0072, To propagate the failure notification throughout the network in an efficient manner, each node (e.g., routers 124, 126, 128 of FIG. 1) preferably has a number of

pre-configured multi-cast trees. These multi-cast trees may be stored in the label-swapping table (e.g., in the forwarding database 312) for the router. Thus, when the router becomes aware of a fault, it sends a notification via a multi-cast tree that specifies paths to all the other nodes in the network. When a node receives a fault notification from a particular one of its interfaces (e.g., one of its ports) it may use the label 200 (FIG. 2) from the notification, along with the identification of the interface to look up the appropriate next-hop(s) in its label-swapping table).

In regards to claim 130 Jain anticipates first and second switching routers each have at least one incoming label map (page 7, section 0072, label-swapping table (e.g., in the forwarding database 312)) containing instructions for incoming data flows, data flows being represented by corresponding flow labels (page 7, section 0072, label-swapping table (e.g., in the forwarding database 312)) and wherein step of transferring knowledge is performed on a regular basis (page 8 section 0085, availability of the LSP 702 may be advertised within the network 100 using IGP to send protocol-opaque Link State Attributes (LSAs) having indicia of the protection LSP).

In regards to claim 131 Jain anticipates the step of transferring knowledge being accomplished by first and second label switched paths sharing an incoming label map (Page 9 section 0092) In RESV (reservation) messages used to form an LSP for communicating data, nodes that support this feature will recognize the TLV 800 (e.g., by recognizing the contents of its type field 804) and add the previous hop label and link SRLG to its forwarding table 312 (FIG. 3)).

Allowable Subject Matter

3. Claim 132 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments, see page 7 of the Remarks section, filed 4/03/2006, with respect to the objection to the specification have been fully considered. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SA
04/27/2006

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